

## CLAIMS:

1. A gas-operated gun comprising:

a bisectonal barrel having a breech section defined by a breech front portion and a breech rear portion and a plurality of demountable and interchangeable muzzle sections, each muzzle section being defined by a muzzle front portion and a muzzle rear portion,

a chamber defined by a rear end and a front end, said chamber being operatively connected by said front end to said breech rear portion,

a receiver to which said chamber is mounted to accept ammunition therein, and

an actuation cylinder mounted to said receiver for operation by gas delivered via tubular means from said bisectonal barrel to said actuation cylinder,

a mechanical system operated by said actuation cylinder to perform gun functions of unlocking, extraction, ejection, feeding and relocking,

said breech section comprising a rifled bore that extends forward of said front end of said chamber,

the front end of said breech front portion being defined by an tapered socket having a base and each rear end of each said muzzle rear portions being defined by a tapered plug having face, said tapered plugs being configured to mate with said tapered socket, and

the bisectonal barrel formed by said muzzle section being joined to said breech section by junction of said tapered plug with said tapered socket.

2. The gas-operated gun of claim 1 further comprising:

an alignment pin extends forward from said tapered socket to operatively align said muzzle section with said breech section.

3. The gas-operated gun of claim 2 wherein:

the front end of said breech section has external threads that mate with threads of a collar nut captive on the rear end of the muzzle section to operatively connect the muzzle section to the breech section to provide a continuous bore from the rear end of said breech section to said front end of said muzzle section.

4. The gas-operated gun of claim 3 wherein:

said tapered plugs of said muzzle sections have a first port that joins with a second port in said base of said tapered socket of said breech section and

the combination of said first and second ports provide a passage for propellant gas to flow from said bore of said gun barrel to said actuation cylinder.

5. The gas-operated gun of claim 4 wherein:

said first ports are sized to control the volume of gas that is passed to said actuation cylinder.

6. The gas-operated gun of claim 4 wherein:

said front end of said muzzle sections are externally threaded to attach auxiliary devices.

7. The gas-operated gun of claim 4 wherein:

there is approximately six inches of rifled bore to cause a projectile fired from said gun to spin at a rotational velocity that is sufficient to stabilize the flight of the projectile.

8. The gas-operated gun of claim 1 wherein:

said muzzle sections comprise smooth bores.

9. A gas-operated gun comprising:

a barrel defined by a breech end and a muzzle end and containing a bore,

a chamber defined by a rear end and a front end by which said chamber is operatively connected to said breech end of said barrel,

a receiver to which said rear end of said chamber is mounted to accept ammunition therein,

an actuation cylinder mounted to said receiver with a portion of said receiver extending over said actuation cylinder and over said breech portion of said barrel,

a mechanical system positioned in said receiver and operated by said actuation cylinder to perform the gun functions of unlocking, extraction, ejection, feeding and relocking, and

a tube connecting said bore of said barrel to said actuation cylinder for passage of propellant gas from said bore to said actuation cylinder while effectively shielding said barrel from positional movements of said actuation cylinder caused by interaction between said actuation cylinder and said mechanical system.

10. The gas-operated gun of claim 9 wherein:

threaded fasteners serve to support said actuation cylinder in said receiver and enable the free floating of said barrel.

11. A gas-operated gun comprising:

a bisectonal barrel having a breech section defined by a breech front portion and a breech rear portion and a plurality of demountable and interchangeable muzzle sections, each muzzle section being defined by a muzzle front portion and a muzzle rear portion,

said breech section comprising a rifled bore that extends forward from said front end of said chamber and said muzzle sections comprise smooth or rifled bores,

the front end of said breech front portion being defined by an tapered socket having a base and each rear end of each said muzzle rear portions being defined by a tapered plug having a rear face, said tapered plugs being configured to mate with said tapered socket,

the bisectonal barrel being formed by said muzzle section being joined to said breech section by junction of said tapered plug with said tapered socket,

a chamber defined by a rear end and a front end by which said chamber is operatively connected to said breech rear portion,

a receiver to which said rear end of said chamber is mounted to accept ammunition therein, and

an actuation cylinder mounted to said receiver with a portion of said receiver extending over said actuation cylinder and over said breech end of said barrel,

a mechanical system positioned in said receiver and operated by said actuation cylinder to perform the gun functions of unlocking, extraction, ejection, feeding and relocking, and

a shaped tube connecting said bore of said barrel to said actuation cylinder for passage of propellant gas from said bore to said actuation cylinder while effectively shielding said barrel from positional movements of said actuation cylinder caused by interaction between said actuation cylinder and said mechanical system.

12. In a gas-operated gun comprising:

a receiver, an actuation cylinder, a mechanical system positioned in said receiver and operated by said actuation cylinder to perform the gun functions of unlocking, extraction, ejection, feeding and relocking, a chamber a chamber defined by a front end and a rear end by which said chamber is operatively connected to said receiver, a barrel having a bore and tube means to conduct gas from said bore to said actuation cylinder,

the improvement that comprises;

said barrel being a bisectonal barrel having a breech section defined by a breech front portion and a breech rear portion and a plurality of demountable and interchangeable muzzle sections, each muzzle section being defined by a muzzle front portion and a muzzle rear portion,

the front end of said breech front portion being defined by an tapered socket having a base and each rear end of each said muzzle rear portions being defined by a tapered plug having face, said tapered plugs being configured to mate with said tapered socket, and

the bisectonal barrel being formed by said muzzle section being joined to said breech section by junction of said tapered plug with said tapered socket.

13. The gas-operated gun of claim 12 wherein:

said tapered plugs of said muzzle sections have a first port that joins with a second port in said base of said tapered socket of said breech section,

the combination of said first and second ports providing a passage for propellant gas to flow from said bore of said gun barrel to said actuation cylinder and

said first ports are sized to control the volume of gas that is passed to said actuation cylinder.

14. In a gas-operated gun comprising:

a receiver, an actuation cylinder, a mechanical system positioned in said receiver and operated by said actuation cylinder to perform the gun functions of unlocking, extraction, ejection, feeding and relocking, a barrel defined by a breech end and a muzzle end and containing a bore, and tube means to conduct gas from said bore to said actuation cylinder,

the improvement that comprises having said actuation cylinder mounted to said receiver for its support in said gun.